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Methods and Power
Of Dividend Paying
Of "Old Line" Companies

Economics

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METHODS AND POWER OF DIVIDEND PAYING OF
"OLD LINE" COMPANIES

BY

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THESIS FOR THE DEGREE OF MASTER OF ARTS
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THIS IS TO CERTIFY THAT THE THESIS PREPARED UNDER MY SUPERVISION BY

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ENTITLED

Methods and Dividend Paying
Power of Old Line Insurance Cos.

IS APPROVED BY ME AS FULFILLING THIS PART OF THE REQUIREMENTS FOR THE DEGREE

OF

Master of Arts

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S E C T I O N I.

Surplus and its sources.

Before discussing the methods and power of dividend paying, it might be well to review the subject of surplus, or dividends, and its sources. The purpose of dividends is to give each policy holder his insurance at its exact cost. In fact, it might be said to be the determination of each one's share of a total yearly cost. The net premium for a life insurance policy is based upon two assumptions; first, that the insured persons will die in accordance with the mortality table used; second, that a certain rate of per cent will be earned on all funds invested. Upon these hypotheses, the net premium is exactly sufficient for the payment of all claims that may accrue. But if the actual mortality experienced is not as large as that assumed, and the funds invested earn more than the assumed rate, it is evident, that after the reserve account has been satisfied, there will remain a surplus or overpayment, which may be returned to the policy holders who contributed it. By returning this overpayment, each policy holder is charged his ratable share of the losses incurred and in the necessary reserve. To take a concrete case; suppose 81,822 persons insure at age 35 on the ordinary life plan, and pay a net premium of 21.08 cents each. This gives the company a fund of \$1,724,807.76. If five per cent. interest is realized the first year, the fund is increased to \$1,811,048. Now, according to the American Mortality Table, there should be \$732,000 to pay for death claims at the end of the year,

but if the actual experience has been only 70 per cent. of the assumed, the death claims would amount to \$512,400. Deducting this from the funds on hand, leaves \$1,298,648 at the end of the year. There survives, however, at the end of the year \$81,309,600 of insurance, each \$1000 of which must be credited with a terminal reserve of \$12.88. This uses \$1,047,267.65 of the funds on hand, leaving as surplus saved out of the premium receipts, \$251,380.35. This is the saving in mortality and in excess of interest earned. In addition to these two, there may be gains from other sources, only one of which is very profitable. The net premium is an amount that will exactly effect the insurance of the members of a company. It is necessary to add to the net premium a sum for the purpose of defraying expenses. This added sum is called "loading." If this expense element is not all needed for the purposes that it is provided for, the balance is paid back to the insured, as an element of his dividend. This saving is entitled to whatever interest it has earned during the year.

Another source of gain to the insured persons in a company is from lapses and forfeitures. A policy lapses if the premium is not paid when due. A policy is forfeited when one or more of its non-forfeiture provisions is violated. When a policy lapses, money is left with the company. Formerly if a policy lapsed the entire reserve was forfeited to the company, and thus quite large savings were made from this source. Now, however, a more equitable practice prevails. After the first or second year, as the case may be, the greater part of the reserve is returned to the policy holder in case of lapse or surrender.

If the lapse occurs during the first two years and no reserve

is released there is really a loss and not a gain to the policy holders of a company, as the forfeited reserves will not compensate for the expense incurred in placing equivalent business upon the books. Then too, another fact should be taken into consideration. As the insured lapses have recently undergone a medical examination, they are probably better risks than the average risks of the company. At the end of the second or third year, the member who lapses is entitled to the surrender value that was mentioned, equal to the larger part of his reserve. At this time, however, the policy holder has contributed enough to remunerate the company for the initial expense of getting the business. This remuneration consists of the sum that is retained as a surrender charge. The surrender charge varies with different companies. In some states, the cash surrender values are regulated by statute, but with these exceptions, the cash surrender value is whatever the company wants to make it. In modern policies, these values are given for each year.

The surrender value may be withdrawn in cash, or it may be applied to the purchase of paid-up insurance or extended insurance. The paid-up insurance values of some companies participate in the surplus earnings of the companies.

There is a small saving made on the net premium charged. For instance, the net premium of an Ordinary Life policy at age 35, issued on a 3 1/2 per cent. reserve basis, is \$19.90726. The net premium charged is \$19.91. This is a very slight saving on a \$1000 policy, but on the company's total business for a year, the saving amounts to several hundred dollars.

S E C T I O N I I .

Distribution of Surplus. Policy, application and charter provisions.

The policy contracts of "old line" companies are more or less indefinite in their statements pertaining to the distribution of surplus. The usual language of a participating policy merely stipulates that the policy shall share in the surplus as apportioned by the company. The statements pertaining to the payment of dividends might be divided into three classes. These will differ only in the degree of explicitness of the statements. The first class will contain those which state that everything earned by the policy shall be returned; the second class, those that state that the surplus shall be apportioned by the directors or trustees of the company; the third class, those in which the statement as to dividends is very indefinite or where no statement as to dividends is contained in the contract at all.

The first class of statements mentioned can be illustrated by the following extract from the contract of one company. "This policy shall, while in full force, share in the surplus annually, according to the company's usage at each distribution after two years from the date hereof, until all contributions to the surplus found in the course of making such distributions to have arisen from this policy shall have been returned." This is the only statement found by the writer, which promises to continue paying dividends until all the surplus contributed by the policy shall

have been returned.

The second class of statements can be illustrated by quoting from the larger part of "old line" company contracts. The following are a few examples.

(a) "While this policy is in full force, and before default in payment of premiums, it shall share in the divisible surplus of said company, and the amount of dividends as determined by the directors of said company shall be conclusive upon any person claiming an interest in this policy."

(b) "This policy shall participate annually in the surplus earnings of the company in accordance with the regulations adopted by the board of trustees."

(c) "This policy, while in full force, shall share in the annual distribution of surplus, according to the rules established by the directors, provided that paid-up policies of less than one hundred dollars in amount shall not share in such distribution."

(d) "This policy is written upon the annual dividend plan, and beginning with the end of the second year, will participate annually in profits as apportioned by the company."

(e) "If the assured be living, and this policy is in full force on the first day of January, nineteen hundred and twenty-one, the society will pay to the assured or assigns, a cash dividend, consisting of the policy's full share of surplus profits, as determined by the actuaries of the society."

The third class contain the statements which are indefinite as to the payment of dividends. For example, in some of the contracts issued by one large "old line" company, there is not anything said concerning dividends, except these words on the edge of

the policy; "with annual return of surplus" or "with return of surplus every fifth year."

One company's contract says nothing directly concerning dividends, but one of its conditions is as follows. "That in case of default in the payment of any premium, or installment of premium when due hereon, if a sum sufficient to fully meet said payment, or a quarterly installment of the annual premium, shall have been previously credited by this company on account of this policy by way of dividends or surplus premiums; then if there be no other indebtedness to this company on account of this policy, said premium or installment of premium shall be considered, and receipted as paid by the application and cancellation of an equal amount of such previous credit."

The stipulation concerning the paying of dividends is sometimes in the application instead of in the policy. In these cases the policy stipulates that the surplus shall be returned as requested in the application. For example, one policy provision is, "This policy will share in the distribution of surplus as apportioned by the directors, and as requested in the application." The application provision is, "In any distribution of surplus the principles and methods which may be adopted by the company for such distribution, and its determination of the amount equitably belonging to such policy, shall be accepted by and for every person who shall have any interest under said policy, and the receipt of the person whose life is insured shall be in full surrender of all dividend additions to the policy."

Some companies do not say anything at all concerning dividends

in their contracts, but the stipulation is contained in the application. An example of an application statement is as follows, "That in any distribution of surplus, the principles and methods which may be adopted from time to time by the company for such distribution, and its determination of the amount equitably belonging to such policy, shall be and are hereby ratified and accepted by and for every person, who shall have or claim any interest under the contract now proposed." Another one is, "I further agree that in any distribution of surplus, the principles and methods, which may then be in use by the company for such distribution, and its determination of the amount apportioned to such policy shall be and are hereby ratified and accepted by and for every person who shall have or claim any interest in the contract."

Besides the policy and application stipulations in regard to dividends, there is contained, in the charter of some companies, a statement regarding them. In some cases, this is the only one of the three places where any mention of dividends can be found. The application sometimes states that the applicant becomes a member of the company on the issuance of his policy, and will share in the surplus according to the charter terms. The application and charter provisions or statements pertaining to the dividends of one company's policy are as follows: Application; "I hereby agree that such policy shall be a contract made and to be performed in, and in all respects to be construed and determined by the company's charter and the laws of the State of Connecticut."

Section 14 of the charter reads, "Each member shall be credited with his or her proportionate share of the amount of premiums

earned, after deducting losses and expenses, and of the profits of said company derived from investments, which share of profits so derived shall be credited to each member for his or her proportionate share of the premiums earned, and he or she shall be entitled to a certificate on the books of the company." The company, from whose charter the above statement was taken, has nothing in its contract pertaining to the paying of dividends.

In the case of mutual-stock companies, the charter always stipulates the manner in which the profits shall be apportioned to the stock-holders, and sometimes to both stock-holders and mutual policy holders. An example of the former, taken from the charter of one of the large mutual-stock companies, reads, "The holders of said capital stock may receive a semi-annual dividend on the stock so held by them, not to exceed three and one-half per cent. of the same, such dividends to be paid at the times and in the manner designated by the directors of said company."

The amount of the capital stock authorized to be issued is stated in the charter. This capital stock has in some cases been increased by legislative acts, and dividends are paid on the increased amount at the same rate as before.

The charter of one company has the following provision in regard to dividends payable to mutual policy holders as well as stock-holders; "A semi-annual dividend of five per cent. shall be made on the stock, to be payable on the first day of April and October annually. The only other dividends that may be made to stock-holders shall consist of the profits derived from policies issued without profits to the policy holders. These dividends when

made shall be declared on the first day of April annually." The dividends to stock-holders are paid before any may be apportioned to policy holders. As to the dividends payable to the latter, the charter provision is, "From the residue of the profits arising from the mutual business, after the provisions indicated in Article VI, (referring to the foregoing provision) the board shall annually, in the month of January, declare a dividend to mutual policy holders, according to kind and class of each policy, or place to the credit of the policy its equitable proportion of the undivided surplus, which shall be payable, according to the terms and condition of the policy."

We see by the foregoing that in order to ascertain the methods and manner employed by "old line" companies, in the distribution of their surplus earnings, it is necessary, not only to look through their policy provisions, but also the applications, which are made a part of the contracts, and the charters with their amendments.

Methods of distribution.

There have been used in the history of life insurance many different methods of distributing the surplus earnings on the gross premium receipts. The problem of equitably dividing the surplus earnings of the premium receipts was until 1860 considered as almost insoluble. It seems strange that, although the premium was calculated on a scientific basis, the surplus premium should be a source of trouble to the actuaries.

In the early history of life insurance in the United States, surplus was divided on what was known as the "percentage" plan.

This plan consisted of taking the total premiums for the period for which the dividend was to be declared of all the policies that were entitled to such a dividend, and then finding the percentage which the total surplus bore to this amount. This percentage was then multiplied by each policy holder's premium receipts, and the result would give each member his share of the surplus. The first companies gave all policies issued a dividend of the same percentage of the premiums paid. Later on a change was made and the limited payment life policies and endowments were given a less percentage than the ordinary life policies. The percentages paid on ordinary life policies ranged from thirty-five to fifty, by one company between 1847 and 1869. On endowments the percentage was between thirty-three and forty. Some companies, on paying their first dividend, paid one which was found to be too large and when the time for the paying of the next dividend came, the percentage was considerably reduced.

The percentage plan of distributing surplus was simple but not at all equitable. Sometimes the percentage was so large, that the reserve was impaired on the limited payment policies. This caused the companies to pay a smaller percentage on that class of policies. Another objection to the percentage plan came from the ^{fact} that the old policy holders as well as the new participated alike. In other words, money which really belonged to the older members was given to the new ones. A policy that had been in force forty years was given the same dividend as one that had been in force five years, although the one had contributed more than twice as much as the other. The percentage was computed upon the original

amount without any regard to changed conditions. If reversionary additions were bought with the dividends, no account was made of that fact when future dividends were paid. Each premium being the same, both dividends were necessarily of the same amount.

A few of the early companies in this country paid their dividends in scrip. In some cases these bore interest, but in others no interest was allowed. They were usually redeemable at the pleasure of the board of directors. If a policy lapsed, the scrip was forfeited. The scrip in some cases was liable for any losses of the company, as long^{as} it was held unredeemed. When the dividend was not paid in scrip it was credited to the policy, and was applicable to reduce premiums, to purchase reversionary additions or to cancel notes.

The unreasonableness of the percentage plan was generally conceded. This was especially true with the Trustees of the Mutual Life Insurance Company. In 1861, they sent the actuary of the company, Mr. Sheppard Homans to England, to get advice from English actuaries on the question of distribution of surplus. But no satisfactory plan was found. However, in 1863, Mr. Homans and his assistant, Mr. David Parks Packler, introduced the contribution plan for the apportionment of surplus earnings. The first published description of it appears to be that contained in the Twentieth Annual Report (Feb. 1, 1863) of the Mutual Life Insurance Company of New York. The essential features of the plan lie in paying strict regard to the yearly experience in determining the rates of saving from reserve mortality and expenses. Return of surplus under the plan must therefore vary from year to year according as the

interest, expenses and death losses may have been more or less heavy.

The plan became popular at once and has since been used in the distribution of surplus almost universally by our "old line" companies. The older companies adopted the plan in the following order:

Mutual Life of New York	1863
Northwestern Mutual	1864
New York Life	1867
New England Mutual	1867
State Mutual	1868
Connecticut Mutual	1869
Mutual Benefit	1870
Penn Mutual	1871

The system is described by Mr. Homans as follows; "Credit each policy holder, first with the amount actually reserved at the last preceding distribution of surplus, as the then present value; and second, with the effective premiums paid since that time, both sums being accumulated at the actual current rate of interest to the date of the present distribution; and charge him with the actual cost of the risk to which the company has been exposed during the interval, determined by means of a table, representing the rates of mortality and interest actually experienced; and third, with the amount now reserved as the present value of the policy. The difference between the sum of his credits and the sum of his debits determines the overpayment or contribution from the policy proper."

To make the plan more clear an actual case will be given. Assuming that the company is on a three per cent. reserve basis, and that the American Mortality Table is used, 81,822 persons at age 35, on the ordinary life plan, pay a net premium of \$21.08 each. This gives the company a fund of \$1,724,807.76. Assuming that this fund earns five per cent. interest during the year, we have \$1,811,048.14. The actual insurance mortality during the year was \$512,400. Deducting this from \$1,811,048.14, leaves \$1,298,648.14 at the end of the year. There survives at the end of the year \$81,309,600 of insurance, each \$1000 of which must be credited with a terminal reserve of \$12.88. This leaves as a surplus from the net premium receipts \$251,381. There were 81,822 persons who paid the first premium, hence each one receives as his share \$3.07.

To the net premium is added a certain amount arbitrary with each company, called "loading" for expenses. Thus a gross premium of \$27.93 for an ordinary life policy at age 35, includes a "loading" of \$6.85. If this expense element is not all used, there will be a saving. This is entitled to whatever interest it has earned during the year. This amount added to the \$3.07, makes the total earnings of a policy on the ordinary life plan at age 35, not considering lapses and surrenders.

The plan as described above is employed almost exclusively, but some companies have modified it. One of the modifications is to distribute excess interest in proportion to the reserve, and all other profits in proportion to the "loading." Another is to distribute all earnings in proportion to the amount of the reserve.

Distributing surplus on the contribution plan, not only tends towards equity to the policy-holders, but leaves the company free to charge rates and adopt new plans without disturbing the old ones.

The contribution plan makes no provisions for surplus arising from lapsed and surrendered policies. If the contribution plan were to be adhered to, the surplus coming from this source would have to be returned in proportion to the amount of the reserve that is subject to lapse and surrender. Some of the companies that return their surplus annually according to the contribution plan, put this surplus into the general surplus fund and do not return it to the policy holders.

There has been much discussion concerning the contribution plan. A great part of it has been on the relation that the apportionment of expenses bears to the distribution of surplus and the application of the plan to this distribution with special reference to the best methods of assessing expenses. These include investment and insurance expenses, collection fees, agents' commissions, taxes, and medical fees. The prevailing opinion seems to be that all investment expenses should be paid out of the investment income, expenses that are determined by the premiums out of the premium income, and all other expenses out of the cost of insurance or the amount charged for the expected mortality.

Objections have been raised to the plan on the ground that it is not equitable. In a criticism of the plan, given in Volume XIV. of the Journal of the Institute of Actuaries, there is the following statement, "While admitting Mr. Homan's plan is a great improvement on the method which divides the surplus in proportion to

the premiums paid, we are of the opinion that the method falls very far short of perfect equity, inasmuch as it makes the same charge for the current assurance of all the assured of the same age, whatever the length of time they have been on the office books; and the assured of long standing thus share unduly and therefore inequitably, in the profit from the reduced mortality consequent on the large influx of recently selected lives."

One much debated point is whether the heavy initial expenses should be borne by the new members or whether some of it should be borne by the entire membership body. It is held by many insurance men that the former should be the case. They hold that it is not just that new members should be allowed to participate in the benefits of established companies which the old members have built up, without paying the initial expenses.

There have been used and are used in other countries various methods of distributing surplus earnings to policy-holders. In Great Britain, a generation ago it was pointed out that "the true mode of dividing surplus was in proportion to the amount at the prevailing rate of interest, of the payments of each contributor over and above those required for the risk." Another was to compound the loadings until the death of the policy holder and then a bonus or dividend should be given equal in amount to the accumulated leading payments.

In 1861, each one was given an amount in proportion to his contribution to the profits. The sources of these profits were loading, interest more than that assumed, and lapses and surrenders. Other methods were in proportion to the value of the policies or

the sum insured; in proportion to premiums paid; and a uniform percentage to all members was sometimes paid.

At the present time in Great Britain, the bonuses or dividends are paid in proportion to the loading, and if the loading is a certain per cent. of the premium, then the bonus is always a certain per cent. of the premiums received. It is a common practice in Great Britain to load the premium heavy so as to be able to return part of the loading in bonuses or dividends.

Time of Distribution

Dividends may be apportioned to policy holders annually, or at the end of stipulated periods of five, ten, fifteen or twenty years. The former is popularly known as the annual dividend system, while the latter is known by such names as Semi-Tontine, Distribution and Deferred Accumulation. When the policy holder makes his application, or when the first dividend is due, he elects by what system he wants his surplus apportioned. Usually, annual dividend policies do not begin to draw dividends until the end of the second year. In some cases, however, a dividend is paid at the end of the first year. But as a rule, nothing is accumulated the first two years, on account of the high initial cost of getting the business. The arguments for the annual dividend plan are as follows. The essence of mutual life insurance is the giving of protection at its actual cost. This cost depends upon expenses, mortality and interest earned. As these things are known at the end of each year, there is no reason why the overpayment of the premium or surplus should not be returned. If this were done, the policy holder would get his insurance at its actual, annual cost.

The dividends are not subject to forfeiture, as they are under

the deferred dividend plans. When he leaves his dividends with the company, he does not always know the amount he has to his credit. The cash surrender and loan values are not increased; in fact they are useless to him until the end of the deferred period. Sometimes, he can not buy additional insurance with the amount at that time without passing a satisfactory medical examination.

The arguments for long term or deferred dividends are briefly as follows. A company should always have on hand more than enough to exactly balance its liabilities. Investments of all kinds are liable to fluctuations and a safety fund is necessary to protect the company from becoming insolvent. How large this should be depends upon the amount of the assets and liabilities, but if the dividends are allowed to accumulate, they will constitute an ample fund for the protection of the policies of the company.

Another argument is that the deferred dividends are paid to the surviving members who complete the dividend period, as a reward for their persistency in paying premiums.

The disadvantages of the annual dividend plan lie in the fact that in a great many cases, the general surplus is not large enough for the safety and protection of the policy holders. The companies paying annual dividends are so anxious to pay good dividends that they almost forget the protection of the company from insolvency, and do not increase the general surplus as much as they should. After all safety is the first requisite to good insurance, and a company who has a large general surplus or guarantee fund is always looked upon with favor.

The disadvantages of the latter or deferred dividend plan are

as follows. It tempts men to take life insurance as a speculation. The policy holder wagers with his fellow members that he will pay all the agreed premiums and live until the end of the period but that many of them will not do so. The stake is the dividend which he will forfeit in case he does not live to pay all the premiums.

Another disadvantage is that the policy holder, by forfeiting his dividends, pays more for his insurance than it actually costs. He forfeits money which really belongs to him.

Long term dividend periods also tend to conceal small profits. The company can be more extravagant and less conservative in its management without being detected by the policy holders as well as by the public, than is possible when the surplus earnings are returned every year.

S E C T I O N III.

Application of Surplus.

After the amount of the surplus to be returned has been determined, the question naturally arises, how shall this surplus be used. We have already seen that in the early history of life insurance in this country, the first dividends were paid in the form of interest bearing scrip, redeemable at the pleasure of the Board of Trustees. In some cases, the dividend could be used to reduce premiums or to cancel notes. The dividend could also be converted into reversionary additions in some companies. The English method was to give reversionary bonuses, payable at the death of the insured, with the amount of the original policy. The additions or bonuses were paid-up whole life insurance, and for endowment policies the bonus is converted into paid-up endowment insurance, maturing at the same time as the endowment. The amount added was a per cent. of the sums insured, without any regard to the ages of the insured. A policy that had paid five premiums would receive five times as much as a policy that had paid only one. There were some companies that gave a percentage of the sum insured together with the additional bonuses. The latter is in practice today in our country, with those companies that give in place of a cash dividend a certain amount of participating additions.

In the United States, the general practice is to pay the dividend in cash. There is a condition, however, in a majority of the companies, that the next year's premium must be paid. In other

words the dividend may be used in part payment of the next annual premium, but in some cases no regard is paid to this fact. This cash dividend may also be applied to the part payment of a premium loan. If the policy is fully paid-up, the dividend, of course, is paid in cash.

Besides these ways in which the cash dividend can be applied, almost all companies allow their policy holders to convert their dividends into paid-up additions. These are known by other names, such as "reversionary additions" and "dividend additions." These additions or the amount of this full paid-up insurance is purchased at the company's regular single premium rates according to the attained age of the insured. This is calculated by finding the net single premium that will insure one dollar at that age. Then find out how much the whole amount of the dividend will insure. For example, at age 30, the surplus is \$21.90. The net single premium which will at that age insure one dollar for whole life is \$.3061, using the Actuaries' Table at 4% interest. If \$.3061, then, will insure one dollar, \$21.90 will insure as many dollars as \$.3061 is contained in it, or \$71.54. This is the addition to the policy that the surplus named will purchase. The amount so bought is fully paid-up, and participates in the surplus earnings of the company, in the same manner as the original amount insured. Dividends applied in this way affect a corresponding increase in the surrender and loan values of the policy. Some companies permit the paid-up additions of past years to be converted into cash, the same to be applied to the reduction of the current year's premium. In order to get paid-up additional insurance, the companies usually require satisfactory evidence of good health.

Another application of surplus is what is known as the Accelerative Endowment plan. The dividends are applied to the conversion of the policy into an endowment, payable at a specified and gradually diminishing age, or if preferred into a fully paid-up participating policy, payable at the same time as the original policy. The plan operates as follows; the dividends are left with the company. In consideration therefor, the company agrees to pay the sum assured when the policy holder shall have attained a certain age, or at his previous death, thus enabling him to procure an endowment policy at the usual rates charged for policies payable at death only. As each dividend is ascertained and applied, the company agrees to pay the policy at a specified age. All dividends, however, need not be used to accelerate the policy. The insured is free at any time to use the current dividend to reduce the premium. If all the dividends are used, the policy becomes payable at a gradually diminishing age. For example; a policy holder has an Ordinary Life Policy for \$10,000, the premium being \$263.50. Assume that at the end of the first year, he has a dividend of twenty-five dollars to his credit. If he chooses to use this to hasten the payment of his policy on this plan, the company would agree to pay the sum assured at age 85 or previous death. The application of the next dividend would probably make the policy payable at age 82. The future dividends, in like manner, would still further accelerate the payment of the policy.

Another method of application of dividends used by some companies is when they are applied to hasten the time when the policy will become paid-up in full. Under this plan the surplus declared

is accumulated, to reduce the number of premiums required under the contract. During the accumulation, the dividends are usually never forfeitable, but are always subject to the order of the owner and are payable with the policy at death. The dividends are credited annually with interest. Whenever these accumulations, together with the reserve on the policy, equal the reserve on a fully paid-up policy of the same kind and amount at the age attained, no further premiums will be required, and the company will endorse the policy as "Paid up in full." In other words while the policy holder is paying the premiums from the beginning of his policy, the dividends with interest are paying them from the other end, thus shortening the time during which dividends must be paid. Before the policy becomes paid-up, as in the accelerative endowment plan, any part or the whole of these accumulations and the current dividends, may be applied to the payment of premiums. Another important fact is that if a policy becomes a claim or is surrendered for its cash value, the accumulations will be paid with the amount otherwise due.

Besides using dividends for reducing premiums, buying additions; on the accelerative plans, they may be deferred for periods of five, ten, fifteen or twenty years. With very few exceptions, the old Tontine system has been abandoned. Under that system, a tontine period of ten to twenty years was fixed upon in the policy, and during that period no dividends were paid until its expiration. No surrender value either in cash or paid-up insurance was given, but in the event of death, the face of the policy was given to the beneficiary. Modern contracts, however, pro-

vide for cash values and paid-up and extended insurance values. Usually, when a deferred dividend period is selected, no part of the surplus already accumulated is paid in the event of death or lapse during the dividend period. The essence of the plan being that all surplus shall be accumulated at compound interest and divided among those only who survive and complete the dividend period. Hence the forfeiture of dividends is the only feature of the old Tontine contract remaining. In case of lapsed policies being restored, some companies allow them to become annual dividend policies after restoration. In those cases only the surplus credited to such policies prior to lapse is forfeited to the remaining members of the class.

Accumulative policies are issued under which the accumulated surplus is paid in the event of death or withdrawal, thus doing away with all the features of the old Tontine plan.

After the dividend period is completed, the policy usually becomes an annual dividend paying policy, but in some cases the subsequent dividends are deferred for five year periods.

This deferred dividend plan is known by various names, such as Tontine, Semi-Tontine, Accumulative Dividend, Deferred Distribution, etc. In the first two, the dividends arising from lapses and deaths go to the persistent members of the Tontine or Semi-Tontine class, while in the Distribution policy, the dividends remain the property of the whole body of policy holders. The companies that issue the former, keep the accounts of the semi-tontine class separate, so that a policy holder may know at any time how much he has to his credit.

At the end of the deferred dividend period, the insured may

have his surplus in cash, or may use it to purchase paid-up additions to his policy, if the insurance is continued in force. It may also be applied in various other ways, such as, to the purchase of an annuity on the life of the insured, or on any person nominated by the insured, and applied together with the cash surrender value to the purchase of such annuities. Each company issuing deferred dividend policies, has in its contracts, options of dividend settlement, any one of which the insured may choose at the time the dividend is due.

S E C T I O N IV.

Power of Dividend Paying.

As has been pointed out before in this paper, dividends are derived from four main sources, saving from mortality, saving from interest, saving from the "loading" for expenses and saving from reserves released on lapsed and surrendered policies.

Old-line companies in computing their premiums, assume that the insured persons are going to die in accordance with the rate stipulated in the mortality table used. If a company is conservative in the selection of its risks, the mortality experience will be less than that assumed, and hence the mortality element of the premium will not all be used. Conservatism in the selection of risks means that there has been a careful medical selection. Some companies confine their business to healthful portions of a country, while others have no exceptions in this respect. Some take business in foreign countries while others confine their business to the United States. If a company is very careful in its selection of risks, even such small portions as cities and counties will be exempted from some states, on account of the mortality experience at those places. The accompanying charts show the mortality experiences of twenty-five old-line companies doing business in the United States. The experience shown is for the past seven years. The first column shows what the expected mortality was during each of the seven years. This expected mortality is the cost of in-

surance, including expected payments, less reserves expected to be released by death, on annuities. The second column shows the amount saved each year after paying death losses on the actual net mortality on insurance. The third column shows the percentage of the amount saved of the expected mortality. A glance at the mortality experience columns of each company will show just what each company is saving from this source. It will be seen that some of the companies are saving from thirty to forty per cent. every year, while others are losing from ten to thirty.

Another important fact to be noticed is that the experience as a rule for all the years remains just about the same for each company. This proves that if a company is conservative now, it will probably remain so in the years to come.

These tables are compiled from results given to the Minnesota and Connecticut Insurance Departments, and can be found in the Insurance Reports issued by those states.

Besides using the Mortality Table in computing premiums, compound interest rates must also be used. The reserve is assumed to earn a certain rate per cent. compounded each year as long as the premiums are paid. If a company earns more than the assumed rate of per cent., it is quite evident that after the reserve account has been satisfied there will remain a surplus. Of course the amount that is saved from this source depends upon the rate of per cent. that it is assumed the reserve will earn. If a company is on a four per cent. reserve basis, it cannot be supposed to save as much as a company that operates upon a three per cent. reserve basis. The charts that follow this discussion show the experience of the

twenty companies in interest earnings. The first column shows how much interest it was required to earn to maintain the reserve. The second column shows the amount of interest earned less investment expenses. The third column shows the per cent. of the amount saved of the amount earned. It will be seen by glancing at these percentages that some of the companies saved more than thirty per cent. for the seven years, while others averaged less than twenty per cent. In order to judge each company fairly in respect to interest earnings, it is necessary to take into consideration the assumed rate of per cent. each year. These rates are given on each chart. Not only is the percentage of gain larger in the case of company on a three per cent. reserve basis than one on a four per cent. basis, but there is a larger reserve on hand to earn interest. These conditions should always be taken into consideration when examining relative surplus interest earnings of different companies for a series of years.

Another source of saving is on the expense element of the premium or "loading." This "loading" is not the same in all companies. Its amount is arbitrary with the company. It provides for all the working expenses of the company, less investment expenses. It may also be used to provide for excess mortality losses. If the actual expenses of a company are less than the amount of the loading, there is a surplus saved.

This depends on the conservatism in the management of the company. Some companies pay more to get business than others. Larger commissions are paid, larger salaries are allowed, more advertising is done and so on. The companies that are conservative in these

respects of course save the largest amount. The charts show the amount of "loading", the amount saved, that is, the amount left of the "loading" after subtracting the insurance expenses incurred for the year, and the percentage saved. Very few companies save very much from this source. By examining the charts, it can be seen which companies are the most conservative in their management. They also show that some of the companies are very unconservative, losing in some cases more than three hundred per cent. of the "loading." Here, as in the case of interest earnings, however, allowance must be made in each case for the amount of the "loading". Some companies load heavier than others; consequently they ought to save more, if the same expense items are used in each case.

The last important source of saving is on lapsed and surrendered policies. As has been pointed out before, the saving from lapses and surrenders is not a source of real profit, on account of the expense incurred in placing equivalent business on the books. However, some companies make large savings from this source, by not allowing as large surrender and lapse values. The charts show, in one column the amount of the reserves by surrender and lapse, in another the surrender and lapse values allowed, and in a third the percentage of the amount allowed of the reserves released. It can be seen that the less conservative companies in other respects save the most on lapses and surrenders.

In order to judge a company's dividend paying power fairly, it is necessary to consider these conditions that have been spoken of in each case. It is also necessary that the experience of the company in mortality, interest earnings, expenses, and lapses and

surrenders, be all considered. In other words, a company may have a good mortality experience but a very poor one in expenses. Or very large interest earnings might be offset by unusually heavy expenses. In fact, one of the companies reporting to the Minnesota Insurance department in 1902, saved over thirty-nine per cent. on interest earned, excelling all other companies reporting, but that same company lost over eighteen per cent. on "loading." One company had very good mortality and expense experiences but saved very little from interest. Another had very poor mortality, interest and expense experiences but saved a great deal on lapses and surrenders. Therefore, it is evident, that in order to judge a company's dividend paying power fairly, it is very necessary to consider its savings from all four sources.

AETNA

Reserve at 4%; Since 1900 at 3 1/2%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$1,750,871.	\$339,521.	19.4	\$1,560,528.	\$1,038,211.	39.9
1898	1,820,891.	611,446.	33.6	1,640,529.	582,557.	26.2
1899	1,917,803.	533,762.	23.5	1,736,497.	472,203.	21.4
1900	2,070,036.	744,174.	35.9	1,851,305.	397,864.	17.7
1901	2,289,824.	746,541.	32.4	1,991,496.	474,583.	19.2
1902	2,304,104.	734,802.	31.4	2,104,363.	497,020.	25.2
1903	2,471,163.	850,911.	34.0	2,240,187.	433,153.	16.2

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$1,088,302.	-\$ 10,810.	-1.9	\$731,366.	-\$ 22,522.	-3.0
1898	1,142,820.	-59,541.	-5.2	678,615.	133,419.	23.9
1899	1,236,842.	-114,909.	-9.2	549,502.	116,773.	25.8
1900	1,373,236.	-222,470.	-16.2	672,027.	126,449.	18.8
1901	1,508,010.	-112,221.	-7.4	731,378.	117,040.	15.9
1902	1,615,505.	-196,664.	-12.1	781,375.	150,004.	19.2
1903	1,701,034.	-38,335.	-5.0	848,555.	180,492.	21.0

CONNECTICUT MUTUAL

Reserve at 4%; Since 1882 at 3%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$2,345,041.	\$364,054.	15.5	\$2,097,000.	\$782,042.	27.1
1898	2,348,747.	543,069.	23.1	2,090,207.	362,130.	14.8
1899	2,361,921.	523,287.	22.2	2,099,800.	421,104.	27.0
1900	2,373,663.	413,093.	17.4	2,099,405.	361,881.	14.7
1901	2,384,422.	599,227.	25.1	2,096,562.	387,059.	15.6
1902	2,402,174.	545,256.	22.7	2,102,957.	247,977.	10.5
1903	2,413,075.	482,510.	20.0	2,112,783.	139,779.	6.2

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$ 969,046.	\$309,628.	31.9	\$790,558.	\$98,276.	12.4
1898	930,100.	265,432.	28.5	855,708.	79,601.	9.3
1899	989,773.	150,352.	15.2	659,529.	67,893.	10.3
1900	995,701.	117,462.	11.8	661,220.	66,115.	10.0
1901	1,005,957.	114,768.	11.4	663,414.	76,076.	11.5
1902	1,021,932.	119,883.	11.7	614,444.	66,436.	10.8
1903	1,025,562.	936,112.	15.0	644,285.	62,892.	10.0

EQUITABLE OF NEW YORK

Reserve at 3 and 3 1/2%; Previous to 1897, 4%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount saved	% Saved
1897	\$10,806,199.	\$1,971,158.	18.2	\$ 7,099,395.	\$3,336,529.	31.0
1898	10,705,200.	1,014,223.	9.5	7,611,422.	2,065,337.	21.3
1899	11,405,313.	754,324.	6.7	8,295,503.	2,037,236.	19.8
1900	12,015,000.	1,505,173.	12.6	8,466,240.	2,556,615.	23.2
1901	12,860,000.	1,671,661.	14.4	9,850,000.	2,422,843.	19.8
1902	13,060,000.	1,296,980.	14.5	10,950,000.	2,568,403.	19.0
1903	14,684,533.	1,559,926.	11.0	10,829,037.	2,819,139.	20.7

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$ 9,347,000.	\$1,659,927.	17.8	\$8,412,453.	\$3,001,666.	35.7
1898	9,302,000.	1,349,798.	14.5	7,512,824.	1,421,948.	19.0
1899	10,004,000.	508,906.	5.1	6,303,148.	1,117,610.	17.8
1900	10,725,000.	2,230,589.	20.8	6,033,049.	1,125,228.	18.7
1901	11,699,999.	1,671,661.	16.8	6,755,931.	992,872.	13.1
1902	12,757,467.	1,006,227.	7.8	7,444,180.	1,006,841.	13.5
1903	14,562,639.	480,893.	3.0	8,914,822.	1,480,703.	17.0

GERMANIA

Reserve at 4%; Since 1900 at 3 1/2%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$722,394.	\$140,130.	19.3	\$816,532.	\$355,402.	30.3
1898	743,570.	112,191.	15.2	855,220.	209,580.	19.7
1899	771,745.	67,977.	8.9	893,273.	203,998.	18.6
1900	794,925.	168,133.	21.2	927,839.	227,392.	19.7
1901	794,784.	112,383.	14.2	969,858.	232,157.	19.4
1902	838,305.	219,168.	26.0	1,010,605.	530,202.	34.4
1903	885,980.	243,861.	28.0	1,063,627.	204,461.	16.1

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$705,666.	\$ 40,434.	5.7	\$704,787.	\$134,057.	19.0
1898	735,843.	26,424.	3.6	740,662.	134,389.	18.1
1899	777,074.	-1,779.	0.2	579,694.	124,843.	21.6
1900	791,509.	64,105.	8.1	684,198.	157,733.	23.1
1901	860,036.	27,152.	3.2	464,939.	139,232.	30.0
1902	921,779.	-133,134.	-14.4	464,450.	138,436.	29.8
1903	974,627.	-116,611.	-12.0	496,074.	160,874.	32.0

HOME

Reserve at 4 and 3%; Since 1900, 3 1/2%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$513,313.	\$ 95,297.	18.5	\$350,022.	\$ 97,134.	21.7
1898	501,372.	68,480.	13.7	370,028.	57,445.	13.4
1899	529,594.	132,972.	25.2	397,543.	9,419.	2.4
1900	603,846.	234,395.	38.9	428,324.	37,967.	8.2
1901	607,846.	129,528.	21.4	465,279.	216,024.	31.8
1902	659,186.	182,928.	27.8	504,407.	61,530.	10.8
1903	701,677.	215,398.	31.0	523,555.	48,813.	8.4

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$360,944.	-\$ 96,254.	-26.6	\$308,570.	\$146,868.	47.6
1898	390,148.	-87,469.	-22.4	338,494.	146,877.	43.4
1899	462,219.	-80,923.	-17.5	213,099.	101,008.	47.4
1900	473,473.	-149,658.	-31.6	252,538.	116,127.	46.0
1901	499,485.	-152,340.	-30.5	270,314.	136,555.	50.6
1902	557,242.	-176,463.	-31.7	305,439.	154,279.	50.4
1903	592,282.	-172,999.	-29.0	280,307.	123,375.	46.0

METROPOLITAN

Reserve at 4%; Since 1900 at 3 1/2%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$5,115,176.	-\$1,405,412.	-27.4	\$1,089,312.	-\$208,764.	-23.7
1898	5,657,035.	-1,270,655.	-22.4	1,302,680.	411,123.	24.0
1899	6,595,103.	-1,082,988.	-16.4	1,558,635.	520,820.	24.8
1900	7,504,565.	-1,288,952.	-17.1	2,140,888.	-65,783.	-3.2
1901	8,352,661.	-1,160,718.	-13.9	2,320,061.	527,840.	20.3
1902	9,153,907.	- 676,501.	-07.3	2,789,372.	369,100.	11.6
1903	10,167,227.	-1,037,608.	-10.0	3,332,134.	407,544.	10.9

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$11,146,148.	\$2,404,229.	21.6	\$1,431,427.	\$ 804,161.	56.2
1898	11,632,849.	1,487,753.	12.8	1,497,479.	943,887.	64.0
1899	12,475,352.	528,033.	4.3	1,422,907.	695,205.	48.9
1900	13,945,459.	1,542,233.	11.1	2,271,294.	1,306,342.	57.6
1901	15,340,234.	1,158,751.	7.6	2,356,034.	1,570,857.	66.7
1902	16,360,811.	951,572.	5.7	2,886,856.	2,073,991.	71.8
1903	18,300,771.	1,449,055.	8.0	3,203,316.	2,323,180.	72.0

MANHATTAN

Reserve at 3 and 3 1/2%; Before 1900, 4%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$699,383.	\$ 47,755.	6.8	\$554,221.	\$176,703.	24.2
1898	683,394.	60,308.	8.8	554,169.	67,482.	10.9
1899	719,150.	148,161.	20.6	535,319.	73,908.	12.3
1900	734,980.	120,134.	16.4	577,268.	105,153.	15.5
1901	748,500	89,795.	12.0	593,934.	173,311.	22.6
1902	810,200.	199,090.	24.5	613,266.	120,602.	16.4
1903	855,300.	212,165.	27.0	631,904.	64,963.	9.3

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$455,545.	-\$ 79,413.	-17.4	\$469,439.	\$ 65,519.	14.3
1898	469,104.	-127,206.	-27.1	479,752.	110,503.	24.0
1899	464,965.	110,310.	-23.7	461,767.	84,594.	18.4
1900	472,916.	-130,258.	-27.5	345,923.	55,913.	16.2
1901	528,612.	-189,817.	-35.9	355,124.	60,021.	17.0
1902	559,130.	-226,333.	-40.5	349,028.	71,400.	20.4
1903	625,158.	-230,458.	-37.0	406,020.	119,501.	29.0

MASSACHUSETTS MUTUAL

Reserve at 4%; Since 1900 at 3 1/2%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$1,168,000.	\$486,038.	41.6	\$ 720,053.	\$208,547.	22.5
1898	1,249,700.	231,553.	18.5	778,070.	99,379.	11.3
1899	1,343,800.	297,378.	22.2	840,700.	96,160.	10.3
1900	1,417,651.	516,250.	36.5	904,965.	129,922.	12.6
1901	1,520,500.	433,235.	28.5	976,000.	98,778.	9.2
1902	1,649,000.	668,232.	40.5	1,057,000.	141,699.	11.7
1903	1,778,000.	634,734.	36.0	1,146,000.	-25,313.	-2.3

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$ 922,625.	\$110,832.	12.0	\$631,463.	\$141,656.	22.4
1898	994,685.	126,353.	12.7	832,890.	124,934.	15.0
1899	1,033,896.	153,254.	14.6	617,465.	117,232.	19.0
1900	1,136,423.	200,034.	17.6	602,352.	99,352.	16.5
1901	1,232,000.	134,793.	17.0	598,416.	68,921.	11.6
1902	1,406,000.	207,603.	14.6	492,010.	84,717.	17.2
1903	1,523,000.	343,372.	23.0	703,510.	106,314.	15.0

MUTUAL BENEFIT

Reserve at 4%; Since 1899 at 3%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$3,540,000.	\$ 737,780.	20.8	\$2,274,602.	\$783,703.	25.6
1898	3,666,875.	1,022,502.	27.9	2,379,543.	724,045.	23.4
1899	3,925,250.	825,501.	21.0	2,498,090.	687,539.	21.6
1900	4,164,560.	1,938,726.	22.5	2,625,958.	523,455.	16.6
1901	4,383,680.	1,229,959.	25.3	2,767,398.	189,402.	6.4
1902	4,568,000.	1,213,108.	26.5	2,923,277.	404,742.	12.1
1903	4,854,850.	1,060,494.	21.0	3,094,687.	427,265.	12.1

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$1,889,267.	\$465,293.	24.6	\$1,845,329.	\$163,691.	8.9
1898	1,982,509.	444,884.	22.4	1,778,620.	152,303.	8.6
1899	2,284,483.	571,666.	25.0	1,573,305.	112,370.	7.1
1900	2,337,694.	613,146.	26.2	1,534,096.	177,735.	11.5
1901	2,218,682.	397,116.	17.9	1,591,653.	181,669.	11.4
1902	2,421,531.	415,179.	17.1	1,695,019.	192,335.	11.3
1903	2,623,366.	473,315.	18.0	1,675,955.	192,950.	11.0

MUTUAL LIFE OF NEW YORK

Reserve at 4%; Since 1897 at 3 1/2%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$11,427,074.	\$2,678,286.	23.4	\$ 8,228,163.	\$3,407,788.	29.3
1898	11,531,516.	2,425,768.	21.0	8,781,409.	1,773,183.	16.8
1899	11,788,393.	838,053.	7.2	9,609,641.	2,059,478.	17.7
1900	13,258,919.	3,455,658.	26.1	10,423,445.	1,462,122.	12.3
1901	14,356,297.	3,706,533.	25.9	11,048,453.	1,857,401.	14.4
1902	15,381,083.	4,490,711.	29.1	11,747,926.	2,668,018.	18.5
1903	15,465,272	3,316,507.	21.0	12,650,350.	1,926,030.	13.2

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$ 9,451,512.	\$ 228,816.	2.4	\$9,369,521.	\$1,967,311.	21.0
1898	9,790,630.	167,492.	1.7	7,810,981.	2,013,752.	25.8
1899	9,870,925.	-1,521,441.	-15.4	5,700,492.	1,324,414.	23.3
1900	10,716,255.	-1,208,964.	-11.2	4,814,098.	1,023,419.	21.3
1901	11,230,028.	-1,397,985.	-12.4	3,363,272.	1,010,994.	30.1
1902	12,262,308.	-1,428,687.	-11.6	4,696,095.	1,509,873.	32.1
1903	13,232,103.	-1,409,318.	-12.0	5,737,919.	1,774,859.	31.0

NEW YORK LIFE

Reserve at 4%; Since 1891, 3 and 3 1/2%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$ 9,390,286.	\$1,421,572.	15.1	\$ 6,642,040.	\$1,748,093.	20.8
1898	10,077,803.	2,036,170.	20.2	6,920,210.	2,366,093.	25.5
1899	10,987,718.	1,481,600.	13.5	7,463,608.	2,206,756.	22.9
1900	12,786,000.	2,791,788.	21.9	8,332,000.	1,767,323.	17.5
1901	13,053,000.	1,702,625.	13.1	9,314,000.	5,715,677.	38.1
1902	14,981,590.	3,149,421.	21.0	10,285,289.	879,989.	7.5
1903	16,721,630.	4,591,854.	27.0	11,120,311.	2,911,236.	26.1

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$ 8,434,655.	\$520,834.	6.2	\$5,685,697.	\$1,122,397.	19.7
1898	9,171,430.	568,422.	6.2	6,324,174.	1,318,546.	20.9
1899	10,614,673.	478,036.	4.5	6,196,567.	1,415,916.	22.9
1900	11,653,000.	226,986.	2.0	5,926,029.	1,366,786.	23.1
1901	12,998,025.	150,003.	1.2	6,584,342.	1,438,871.	21.9
1902	14,724,726.	39,980.	2.7	7,704,225.	1,414,210.	18.3
1903	16,330,352.	-317,186.	-2.0	11,147,602.	2,499,761.	22.0

NORTHWESTERN MUTUAL

Reserve at 4%; Since 1899 at 3%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$4,297,200.	\$1,661,589.	38.7	\$3,049,270.	\$1,798,312.	37.1
1898	4,442,075.	1,678,508.	37.8	3,364,172.	1,758,279.	34.3
1899	4,966,716.	1,914,857.	38.6	3,717,844.	1,640,291.	30.7
1900	5,098,095.	1,885,284.	37.0	4,086,432.	1,563,580.	27.7
1901	5,530,908.	2,014,105.	36.5	4,366,052.	2,071,787.	32.2
1902	5,843,022.	2,301,969.	39.3	4,657,201.	2,062,862.	30.6
1903	6,270,110.	2,134,558.	34.0	5,146,997.	1,223,187.	19.3

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$3,274,195.	\$ 592,302.	18.1	\$1,913,985.	\$437,738.	22.9
1898	3,633,837.	557,576.	15.3	2,003,995.	452,140.	22.6
1899	4,151,715.	444,216.	10.7	1,957,336.	515,262.	26.4
1900	4,635,929.	906,444.	19.6	2,142,177.	524,471.	24.5
1901	5,067,387.	995,530.	19.7	2,678,030.	412,642.	15.5
1902	5,469,687.	1,172,345.	21.4	2,702,013.	397,731.	14.7
1903	5,834,402.	1,367,268.	23.0	3,414,145.	438,973.	13.0

NATIONAL, VT.

Reserve at 3%; Previous to 1900, 4%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$814,560.	\$292,856.	35.0	\$485,249.	\$10,236.	2.1
1898	831,878.	229,917.	30.0	531,787.	40,249.	7.0
1899	889,091.	237,886.	26.8	538,539.	41,338.	6.6
1900	948,454.	324,721.	34.3	657,964.	158,430.	19.5
1901	1,025,627.	451,169.	34.3	754,639.	57,973.	7.2
1902	1,038,602.	328,661.	31.5	849,727.	93,988.	9.9
1903	1,298,138.	560,396.	43.1	957,533.	172,189.	15.2

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$575,978.	-\$ 96,764.		\$680,051.	\$ 67,098.	
1898	614,524.	-137,831.	-22.4	735,634.	59,490.	8.0
1899	698,249.	-195,313.	-27.9	544,915.	30,536.	5.6
1900	791,519.	-177,693.	-22.4	511,688.	102,820.	20.1
1901	875,727.	-124,046.	-14.1	629,735.	163,262.	26.0
1902	942,885.	-151,324.	-16.0	660,534.	179,221.	27.1
1903	966,693.	-234,215.	-24.0	681,433.	109,720.	16.0

NEW ENGLAND MUTUAL

Reserve at 4%; Since 1900 at 3 1/2%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$1,204,045.	\$268,217.	22.2	\$ 978,262.	\$316,623.	24.5
1898	1,265,436.	314,173.	24.8	1,017,598.	79,337.	7.2
1899	1,320,564.	428,579.	32.0	1,055,428.	59,231.	5.3
1900	1,415,373.	480,062.	33.9	1,099,908.	49,806.	4.3
1901	1,471,551.	447,671.	30.4	1,132,536.	136,608.	10.8
1902	1,540,578.	358,520.	23.2	1,201,821.	94,585.	7.2
1903	1,644,930.	421,230.	26.0	1,269,957.	148,376.	10.4

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$ 747,506.	-\$ 379.	-.5	\$916,401.	\$19,280.	2.1
1898	813,757.	13,759.	1.7	821,622.	76,057.	9.3
1899	860,175.	104,102.	12.1	788,391.	75,765.	9.6
1900	908,821.	157,832.	17.3	768,054.	62,630.	8.2
1901	976,559.	97,949.	20.0	-690,562.	57,079.	8.3
1902	1,086,851.	106,120.	9.7	676,571.	70,593.	10.4
1903	1,135,591.	32,847.	3.0	1,674,955.	191,950.	13.0

PRUDENTIAL

Reserve at 4%; Since 1900 at 3%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$2,963,762.	-\$924,667.	-31.1	\$ 804,842.	\$291,440.	26.6
1898	3,441,834.	-762,814.	-22.1	997,135.	226,978.	18.5
1899	4,109,442.	-766,860.	-18.6	1,039,086.	349,329.	25.2
1900	4,942,559.	-761,889.	-15.4	1,198,419.	279,723.	9.0
1901	5,914,191.	-755,344.	-12.7	1,444,011.	-702,094.	-94.6
1902	6,595,303.	-676,369.	-10.2	1,739,427.	246,650.	12.4
1903	7,546,893.	-1,330,934.	-18.0	2,091,936.	373,267.	17.7

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$ 7,376,553.	\$1,105,761.	14.0	\$1,669,011.	\$1,124,944.	67.4
1898	8,083,223.	1,053,831.	13.1	1,568,821.	1,085,633.	69.2
1899	9,400,352.	191,419.	2.1	1,561,886.	1,092,848.	70.0
1900	11,049,911.	654,189.	6.0	1,565,566.	1,093,543.	69.9
1901	12,480,143.	623,234.	5.0	2,133,311.	1,629,524.	74.7
1902	13,741,536.	1,033,930.	7.5	3,025,538.	2,302,616.	76.0
1903	15,274,569.	959,027.	6.0	3,147,410.	2,264,721.	72.0

PROVIDENT SAVINGS

Reserve at 4%; Since 1900 at 3 1/2%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$1,386,609.	\$123,791.	8.9	\$ 63,990.	\$ 84,800.	56.0
1898	1,468,518.	399,662.	27.2	75,771.	9,361.	11.0
1899	1,638,900.	329,755.	20.2	88,737.	49,597.	35.9
1900	1,372,874.	64,073.	4.7	115,545.	13,461.	10.5
1901	1,186,256.	59,895.	5.1	146,399.	113,487.	45.7
1902	1,397,315.	173,608.	12.5	183,764.	77,725.	29.7
1903	1,412,931.	193,939.	16.0	219,187.	101,374.	31.0

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$ 677,834.	-\$200,580.	-29.5	\$ 38,740.	\$ 13,383.	34.5
1898	915,385.	-135,919.	-14.8	133,284.	62,623.	47.0
1899	928,706.	-355,863.	-38.3	185,348.	32,808.	17.7
1900	1,009,978	-93,209.	-9.2	280,635.	100,769.	36.0
1901	1,005,281.	-110,244.	-10.9	365,865.	188,684.	51.6
1902	1,279,843.	-20,556.	-1.7	300,613.	90,943.	30.2
1903	1,253,714.	-103,592.	-8.0	285,861.	-37,433.	17.0

PHOENIX MUTUAL

Reserve at 4%; Since 1900 at 3%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$551,862.	\$223,757.	40.5	\$414,796.	\$122,088.	21.3
1898	598,973.	187,521.	31.3	429,025.	123,902.	22.4
1899	659,909.	154,753.	23.5	454,307.	103,713.	18.6
1900	714,661.	200,136.	28.0	488,346.	105,659.	17.8
1901	759,762.	208,686.	20.6	529,554.	97,835.	15.6
1902	790,340.	308,713.	39.0	568,435.	140,353.	19.8
1903	832,365.	194,201.	23.0	612,863.	165,234.	21.2

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$324,414.	\$209,386.	-64.5	\$406,184.	\$106,961.	24.8
1898	366,109.	-232,381.	-63.4	426,338.	101,601.	23.8
1899	405,024.	-304,863.	-75.2	357,749.	92,142.	25.8
1900	510,995.	-198,561.	-38.8	312,947.	97,713.	31.2
1901	499,040.	-134,675.	-26.9	387,200.	115,418.	29.8
1902	491,497.	178,790.	-36.3	376,237.	101,471.	26.9
1903	581,771.	-149,712.	-26.0	340,603.	83,816.	25.0

PENN MUTUAL

Reserve at 3 1/2%; Since 1901 at 3%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$1,704,775.	\$563,751.	33.0	\$1,168,274.	\$116,279.	9.1
1898	2,429,076.	636,644.	34.4	1,271,530.	-741.	-.5
1899	2,734,569.	685,044.	25.1	1,408,324.	344,827.	19.7
1900	2,111,934.	613,989.	29.1	1,507,132.	130,727.	7.0
1901	2,531,371.	468,885.	18.5	1,660,644.	259,414.	13.5
1902	2,567,846.	661,992.	25.8	1,966,492.	61,045.	3.0
1903	3,114,021.	1,106,143.	36.0	2,167,729.	230,186.	9.6

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$1,397,494.	\$232,555.	16.6	\$832,288.	\$118,177.	14.1
1898	1,564,870.	217,548.	13.9	839,527.	103,173.	12.2
1899	1,937,257.	391,856.	20.2	840,660.	155,015.	18.4
1900	2,039,930.	490,114.	24.0	856,253.	127,966.	14.9
1901	2,693,123.	415,760.	15.4	998,791.	203,190.	20.3
1902	2,516,237.	165,117.	6.6	903,638.	226,877.	25.0
1903	2,945,327.	621,739.	21.0	1,049,501.	167,037.	16.0

PROVIDENT LIFE AND TRUST

Reserve at 4%; Since 1900 at 3 1/2%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$1,144,736.	\$526,149.	45.0	\$1,156,999.	\$545,470.	32.0
1898	1,195,593.	357,758.	29.9	1,243,603.	240,578.	16.2
1899	1,258,360.	437,844.	34.8	1,330,955.	310,842.	19.0
1900	1,368,176.	556,788.	40.7	1,422,454.	150,926.	9.6
1901	1,392,180.	678,900.	49.7	1,520,642.	674,896.	30.8
1902	1,479,820.	732,368.	49.5	1,624,344.	708,330.	29.1
1903	1,562,492.	607,707.	39.0	1,723,647.	504,895.	22.7

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$ 865,530.	\$124,481.	14.4	\$604,707.	\$113,174.	18.7
1898	888,756.	125,419.	14.1	602,852.	97,521.	16.2
1899	958,209.	150,520.	15.8	579,545.	61,124.	10.6
1900	972,658.	109,727.	11.3	525,831.	82,690.	17.7
1901	1,028,198.	46,360.	13.9	377,780.	53,015.	14.3
1902	1,117,046.	83,352.	7.4	436,828.	76,863.	17.6
1903	1,151,263.	-113,626.	-10.0	622,526.	51,423.	8.0

STATE MUTUAL

Reserve at 4%; Since 1900 at 3 1/2%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$728,772.	\$333,463.	45.8	\$515,991.	\$ 2,562.	.7
1898	768,646.	302,213.	39.3	525,055.	58,333.	10.0
1899	828,848.	294,702.	35.6	571,401.	70,318.-	11.0
1900	870,636.	353,095.	40.6	605,004.	76,673.	11.3
1901	936,252.	376,002.	40.2	663,023.	84,461.	11.3
1902	975,789.	492,987.	50.5	726,940.	259,410.	26.3
1903	1,023,946.	209,665.	20.0	793,076.	226,890.	22.2

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$562,970.	\$20,642.	3.7	\$344,567.	\$36,661.	10.6
1898	565,569.	40,561.	7.1	483,887.	38,787.	8.0
1899	629,009.	26,642.	4.3	439,711.	27,716.	6.3
1900	692,217.	67,677.	9.8	341,451.	56,383.	16.6
1901	768,182.	47,958.	6.3	341,079.	48,089.	14.1
1902	791,013.	24,272.	3.6	418,783.	53,928.	12.8
1903	848,479.	25,365.	3.0	460,353.	69,225.	15.0

TRAVELERS

Reserve at 4%; Since 1899 at 3 1/2%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$ 899,254.	\$359,025.	39.9	\$ 683,286.	\$ 83,516.	10.9
1898	904,937.	365,506.	40.4	715,788.	141,272.	16.5
1899	922,034.	336,904.	36.6	797,686.	138,762.	14.9
1900	967,004.	100,375.	10.4	863,530.	116,462.	11.9
1901	1,177,000.	244,997.	20.7	949,266.	125,522.	11.7
1902	1,175,000.	404,214.	34.4	1,029,698.	241,549.	19.0
1903	1,263,000.	231,523.	18.0	1,074,592.	296,819.	21.6

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$332,647.	-\$199,900.	-60.0	\$653,387.	\$112,552.	17.2
1898	149,358.	-463,331.	-310.2	586,642.	99,743.	17.0
1899	167,873.	-542,533.	-323.1	598,059.	192,802.	32.3
1900	201,463.	-494,847.	-245.6	484,817.	223,250.	46.1
1901	229,440.	-511,431.	-222.9	630,163.	319,695.	50.3
1902	257,302.	-476,092.	-185.0	689,844.	335,738.	48.5
1903	382,995.	-409,671.	-107.0	622,530.	315,733.	51.0

UNION MUTUAL

Reserve at 4%; Since 1900 at 3%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$440,899.	\$ 84,377.	19.1	\$255,772.	\$68,805.	21.2
1898	459,000.	108,403.	23.6	264,700.	31,903.	10.8
1899	482,255.	102,600.	21.3	283,369.	22,485.	7.4
1900	515,296.	110,627.	21.5	302,540.	-16,620.	-5.8
1901	535,848.	107,417.	20.1	320,855.	10,251.	3.1
1902	575,933.	159,252.	27.7	341,712.	-55,962.	-19.5
1903	594,430.	194,837.	33.0	362,170.	-36,867.	-11.3

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$290,898.	-\$174,167.	-59.8	\$361,773.	\$ 69,229.	19.1
1898	310,225.	-201,575.	-64.9	362,756.	66,656.	18.4
1899	352,691.	-206,568.	-58.5	315,704.	43,162.	13.7
1900	377,470.	-212,709.	-56.3	451,983.	113,639.	25.2
1901	430,471.	-145,833.	-33.8	223,032.	75,164.	33.7
1902	445,345.	-147,009.	-33.0	235,061.	81,963.	34.8
1903	492,572.	-155,892.	-32.0	223,409.	89,534.	39.0

UNITED STATES

Reserve at 3 1/2%; Previous to 1900, 4%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$426,879.	\$84,935.	19.9	\$275,563.	\$104,802.	27.6
1898	419,134.	86,142.	20.6	280,480.	50,065.	15.2
1899	463,859	-19,693.	-4.2	233,895.	59,632.	17.4
1900	384,314.	27,050.	7.1	295,955.	63,478.	17.7
1901	383,547.	12,459.	3.3	310,952.	59,724.	16.2
1902	437,243.	76,383.	17.4	397,031.	23,398.	5.5
1903	446,400.	70,673.	16.0	372,819.	-15,107.	-4.2

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$236,125.	-\$ 86,211.	-30.1	\$307,972.	\$107,751.	34.9
1898	309,129.	118,763.	-38.4	344,361.	115,276.	33.5
1899	367,201.	97,890.	-26.6	225,730.	54,021.	24.0
1900	361,302.	110,303.	-30.5	230,165.	56,357.	24.5
1901	386,392.	-146,487.	-37.9	294,211.	106,066.	37.1
1902	397,031.	-217,552.	-54.8	407,360.	165,430.	40.0
1903	422,104.	-112,367.	-27.0	373,137.	173,779.	47.0

UNION CENTRAL

Reserve at 4%; Since 1901 at 3 1/2%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$ 818,364.	\$196,558.	24.0	\$ 596,438.	\$360,358.	37.7
1898	1,093,724.	391,251.	35.7	779,864.	345,813.	30.7
1899	1,261,148.	538,900.	42.7	865,745.	399,722.	30.5
1900	1,137,364.	348,567.	30.6	836,802.	520,156.	38.3
1901	1,492,837.	617,723.	41.4	937,304.	585,292.	38.4
1902	1,690,883.	747,075.	44.2	1,053,559.	693,160.	39.6
1903	1,817,330.	776,154.	43.0	1,198,872.	827,974.	40.8

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$ 789,176.	-\$189,399.	-24.0	\$495,822.	\$98,816.	20.0
1898	848,782.	-268,391.	-31.6	452,581.	42,384.	9.2
1899	836,208.	-314,198.	-37.5	459,531.	91,380.	19.9
1900	815,493.	-228,891.	-28.0	446,560.	83,049.	20.8
1901	973,007.	-254,868.	-28.2	441,631.	63,648.	14.4
1902	1,105,412.	-209,375.	-18.9	552,197.	68,015.	12.3
1903	1,214,431.	-127,249.	-10.0	505,259.	59,753.	12.0

WASHINGTON

Reserve 4%; Since 1897 at 3 and 3 1/2%.

Year	Expected Mortality	Amount Saved	% Saved	Interest Required	Amount Saved	% Saved
1897	\$576,784.	\$ 95,822.	16.6	\$542,662.	\$ 15,209.	2.7
1898	588,691.	94,770.	16.0	564,048.	111,502.	16.5
1899	663,208.	133,386.	20.2	587,324.	159,512.	21.4
1900	1,000,648.	24,546.	2.5	602,569.	50,497.	7.8
1901	538,131.	-105,445.	-19.5	607,798.	-45,610.	-8.1
1902	576,380.	73,575.	13.7	616,914.	-2,919.	-4.7
1903	616,931.	69,871.	11.0	670,169.	45,614.	6.3

Year	"Loading"	Amount Saved	% Saved	Reserve on Lapses and Surrenders	Amount Saved	% Saved
1897	\$456,283.	\$125,094.	-27.4	\$446,084.	\$138,587.	31.0
1898	476,787.	193,080.	-40.5	346,150.	76,880.	22.2
1899	626,486.	93,673.	-14.9	296,216.	45,799.	15.5
1900	740,659.	105,855.	-16.8	510,001.	249,926.	49.1
1901	745,348.	-102,709.	-13.7	432,012.	229,150.	52.9
1902	842,059.	-51,277.	-6.7	452,013.	223,010.	49.5
1903	644,359.	-304,415.	-47.0	417,988.	196,621.	47.0





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